Banner Plans & Networks Renal Care Toolkit Revised February 2025

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Introduction Letter

Dear Providers:

Banner Health Network continues to make strides in providing clinically relevant opportunities that impact the quality of care that our providers can deliver. The Banner Health Network Renal Clinical Strategy Committee has devised care standards and a toolkit. These guidelines are geared towards Primary Care Physicians to slow disease progression and improve outcomes of Chronic Kidney Disease (CKD), based on existing current guidelines within KDIGO (Kidney Disease Improving Global Outcomes).

Toolkit Items:

- NEW Renal Care Provider One Pager
- Renal Care Standards and Renal Medication Alternatives Tool
 2024 KDIGO Updated Pharmacy Guidelines
- Early CKD Diagnosis Tip Sheet
- NEW Palliative Care in Advanced CKD & ESRD
- NEW HCC CKD Coding Tip Sheets
- NEW Kidney Health Evaluation for Patients with Diabetes Tip Sheet
- Renal Education and Care Management Support

Diagnosing and coding early CKD is crucial. Earlier identification allows patients to adopt lifestyle changes which may slow down the progression of worsening kidney disease. Early kidney disease is typically asymptomatic. In fact, approximately 37 million US adults are estimated to have CKD with most being undiagnosed, according to the CDC. Early identification, followed by risk stratification and treatment, has been known to potentially reduce the morbidity and mortality from CKD and its related complications, such as cardiovascular disease, hyperlipidemia, anemia and bone-mineral disease.

CKD 4 & 5 without an established Nephrologist - As you are already aware, patients with advanced CKD have multiple sequelae which worsen as CKD progresses. Multiple studies have shown that early Nephrology referral improves outcomes and mortality. Patients should be scheduled for an Annual Wellness Visit, and during that visit, a referral can be made to a Nephrologist if needed. These visits also provide an opportunity to close care gaps and adjust medications as needed.

CKD members on high-risk medications – We have included a Medication Alternatives Tool which has guidelines for renal friendly pharmaceuticals.

We hope these resources assist you in your practice. Thank you for your ongoing work to help Banner Health Network make health care easier, so life can be better. Please consult your Care Transformation Consultant with questions.

Sincerely,

Dr. Sheena Sharma, MD Medical Director & Renal Clinical Strategy Committee Lead Banner Health Network

Care Standards & Best Practices

Renal Care - Provider One Pager

Primary care providers (PCPs) play a critical role in diagnosing and managing early chronic kidney disease (CKD). By focusing on early detection, treatment and careful management, PCPs can significantly improve outcomes for their patients with CKD.



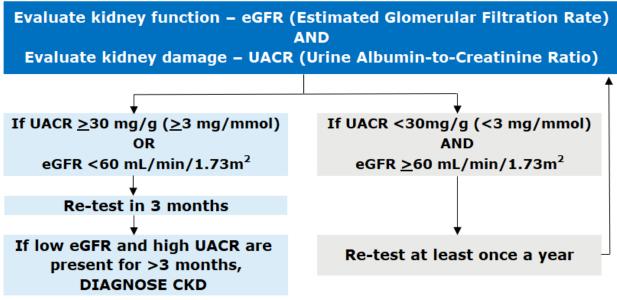
Identify Patients at Risk

CKD is irreversible, and most people do not experience any symptoms until their disease progresses. Early identification allows patients the opportunity to adopt lifestyle changes and/or initiate treatment(s) which may slow down kidney disease progression.

Main risk factors	Additional risk factors
Hypertension (HTN)	 History of acute kidney injury
Diabetes mellitus type 1 and type 2	• Medical conditions that can impact kidney function
Cardiovascular Disease (CVD)	(e.g. SLE, HIV, obesity, genetic risk factors)
Family history of CKD	 Environmental exposure to nephrotoxins

Screening for Kidney Disease

Screening for CKD should be completed at least annually for high-risk individuals. Be sure to order <u>both</u> lab components:



Adapted from https://www.theisn.org/wp-content/uploads/media/pcp/PCPOnePage_1Side_English.pdf

Diabetic Nephropathy

- Can be diagnosed if two of three urine tests for microalbuminuria or macroalbuminuria are positive in a three to six-month period with or without reduced eGFR.
- Diabetes with nephropathy (E10.21 or E11.21) does carry a RAF score.
 - \circ Documentation needs to clearly state that the nephropathy is related to the diabetes.

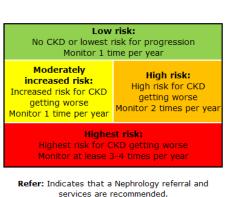
Ensure follow-up with patients

who have a positive result on urine testing to retest in 3 months.

Proper Staging

Use the KDIGO staging guide to determine CKD level, testing frequency and timely referral.

KDIGO Prognosis of CKD by GFR and Albuminuria Categories		Persistent Albuminuria categories Description and range				
		Stage	A1	A2	A3	
			Kidney function	Normal to mildly increased	Moderately increased	Severely increased
	Stage	Kidney function	Test Result	<30 mg/g <3 mg/mmol	30-300 mg/g 3-30 mg/mmol	>300 mg/g >30 mg/mmol
1.73 m ³)	G1	Normal or high	<u>></u> 90	MONITOR 1	MONITOR 1	REFER* 2
per	education G2	Mildly decreased	60-89	MONITOR 1	MONITOR 1	REFER* 2
(ml/mir tion and		Mildly to moderately decreased	45-59	MONITOR 1	MONITOR 2	REFER 3
gories (ml Description		Moderately to severely decreased	30-44	MONITOR 2	MONITOR 3	REFER 3
GFR categories (ml/min Description and r	G4	Severely decreased	15-29	REFER* 3	REFER* 3	REFER 4+
ΰ	G5	Kidney failure	<15	REFER 4+	REFER 4+	REFER 4+



 REFER
 *Consultation with Nephrology service should take place as needed depending on local arrangements regarding frequency of monitoring and timing of referral.

Adapted from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. Kidney Int Suppls. 2013;3:1-150 and NKF.

Slowing Kidney Disease Progression

Once CKD is confirmed, discuss potential treatment options including starting an ACE-inhibitor and encouraging compliance with all prescribed diabetes and blood pressure medications.

	Medical Treatment	Pharmacy Considerations *
•	Keep blood pressure within target range	Consider starting these medications:
•	Ensure glycemic control	 ACEi/ARB to lower blood pressure
•	Monitor complications	and/or protect kidneys
	 Anemia, mineral bone disorders, acidosis, electrolyte imbalances 	 SGLT2i to help manage diabetes and protect kidneys
•	Schedule patients for follow-up appointments and recommended testing	 Loop diuretics to treat fluid overload Avoid Nephrotoxic medications: NSAIDs and PPIs

*See the Renal Care Guidelines & Renal Medication Guidelines & Alternatives for specific recommendations.

Recommend Lifestyle Changes

- ✓ Recommend a kidney friendly diet (avoid excessive protein intake, processed food, limit sodium)
- ✓ Encourage regular exercise and weight management
- ✓ Urge smoking cessation for patients who use tobacco products or e-cigarettes
- ✓ Suggest enrollment in a <u>Kidney Smart[®]</u> class

The Importance of Early Referrals

Early referrals to a Nephrologist have been proven to decrease morbidity and mortality associated with CKD. As kidney disease progresses, treatment options should be discussed early to allow time for well-planned and thoughtful choices to be made with the patient and family members.

Patients with CKD 4 should be referred to a Nephrologist for specialized care.

Renal Care Guidelines

Follow KDIGO Guidelines for testing frequency:

CVD Store 20 and 2h CVD Store 4 CVD Store 5					
	CKD Stage 3a and 3b	CKD Stage 4	CKD Stage 5		
	(eGFR 30-	(eGFR 15-	(eGFR <15-		
	15mL/min/1.73m ²)	29mL/min/1.73m ²)	29mL/min/1.73m ²)		
	Measure hemoglobin at	Measure hemoglobin at	Measure hemoglobin at		
	least annually if no	least twice per year if	least twice per year if		
	anemia exists	not anemic and not on	not anemic and not on		
Anemia		dialysis	dialysis		
	Measure hemoglobin at	Measure hemoglobin at	Measure hemoglobin at		
	least every 3 months if	least every 3 months if	least every 3 months if		
	anemic not on an ESA	anemic not on an ESA	anemic not on an ESA		
	Serum calcium and	Serum calcium and	Serum calcium and		
	phosphorus every 6-12	phosphorus every 6-12	phosphorus every 6-12		
	months	months	months		
	Obtain baseline PTH	PTH every 6-12 months	PTH every 6-12 months		
CKD-Mineral	Frequency of further				
	testing based upon clinical				
Bone Disease	judgement				
	Obtain a baseline level of	Alkaline phosphatase	Alkaline phosphatase		
	alkaline phosphatase	should be monitored	should be monitored		
		every 12 months	every 12 months		
	Measure 25-OH vitamin D				
Metabolic	Start measuring when	Frequency of testing	Frequency of testing		
Acidosis	eGFR <40mL/min/1.73m ²	based upon nephrologist's	based upon nephrologist's		
ACIUUSIS		clinical judgement	clinical judgement		
24-hour Ambulatory Blood Pressure Monitor to establish diagnosis					
Hypertension	Home blood pressure monitoring for ongoing monitoring				

Indications for Nephrology Referral:

- AKI or abrupt sustained fall in GFR
- GFR <30mL/min/1.73m² (GFR category G4-G5)
- A consistent finding of significant albuminuria (ACR >300mg/g or AER >300mg/24 hours)
- Progression of CKD
- Urinary red cell casts, RBC >20hpf
- CKD and hypertension refractory to treatment with 4 or more antihypertensive agents
- Persistent abnormalities in serum potassium
- Recurrent or extensive nephrolithiasis
- Hereditary kidney disease

CKD with Hypertension:

Target systolic blood pressure <120mmHg for all patients, when tolerated

**consider less intensive blood pressure-lowering therapy in people with frailty, high risk of falls or fractures, very limited life expectancy, or symptomatic postural hypotension

First line blood pressure agents for patients with CKD and hypertension					
without albuminuria <u>with</u> albuminuria (urine ACR >30 mg/g)					
ACEi or ARB, calcium channel blocker, or diuretic ACEi or ARB					
All 3 classes are often needed to attain blood pressure target.					

Consider starting these medications for patients with CKD:

	Recommended to START for	DISCONTINUE for	
RAAS antagonists (ACEi/ARB) Prevent progression of CKD	CKD patients: with severely increased albuminuria (>300 mg/g) without diabetes with moderately-to-severely increased albuminuria (≥30 mg/g)	patients with: rise in serum creatinine by >30% within 4 weeks of starting/increasing dose of ACEi/ARB OR	
	with diabetes	eGFR <60 with serious illness that may increase risk of AKI such as infection (temporary – may resume once illness resolves)	
SGLT2i Prevent progression of CKD and reduce risk of cardiovascular death and hospitalization	<pre>with type 2 diabetes and eGFR ≥20 without type 2 diabetes and eGFR ≥20 with urine ACR ≥200 mg/g with heart failure, irrespective of level of albuminuria with eGFR 20-45 with urine ACR <200 mg/g</pre>	during times of prolonged fasting or critical illness (temporary - may resume once risk factors for ketoacidosis are resolved) <i>OR</i> when kidney replacement therapy (KRT) is initiated or at time of transplant	
Loop diuretics Treat fluid overload via sodium excretion	consider using for elevated blood pressure due to fluid overload consider changing thiazide diuretics to loop diuretics when eGFR <30 of these medications 48-72 hours before		

complications; note that failure to restart medications after procedure may lead to unintentional harm

Common medications requiring renal dose adjustments:

Medications to adjust in CKD: *List is not conclusive of all renally dosed medications				
Allopurinol	Fenofibrate	Nadolol		
Antimicrobials	Fluconazole	Sitagliptin		
Anticoagulants	Gabapentin/pregabalin	Sulfonylureas		
Atenolol	Lithium	Statins		
Digoxin	Metformin	Tramadol		
Famotidine	Metoclopramide			

See the Renal Medication Guidelines & Alternatives Tip Sheet for specific medication recommendations.

Renal Medication Guidelines & Alternatives

Medications play an important role in preventing the progression of CKD and symptom management. However, many medications can contribute to worsening renal function if known to be nephrotoxic. There may be an opportunity to choose an alternative renal-friendly medication and/or adjust a dosage of a medication based on most recent eGFR. Please review the following medication considerations for your patients with CKD.

Consider avoiding nephrotoxic medications that may worsen CKD:

Nephrotoxic Medication	Alternative
NSAIDs	Acetaminophen up to 4000 mg/day
Increase sodium and fluid retention, potentially	Topical diclofenac solution or gel for joint pain
increasing blood pressure and worsen efficacy of	(<7% systemic absorption)
diuretics	Antiepileptics or antidepressants for neuropathy
	Opioids for severe chronic pain
PPIs	H2-receptor antagonists (may require renal dose
May result in AKI and CKD due to tubulointerstitial	adjustment)
nephritis and acute interstitial nephritis	Calcium carbonate

Consider adjusting the dose or finding alternatives for these common medications that are renally eliminated:

Drug	Dose adjustment per drug	Alternatives
	monograph	
Atenolol Eliminated renally, increasing risk for ADRs: bradycardia, heart block, dizziness/falls	CrCl > 30: none CrCl 10-30: maximum 50 mg daily CrCl < 10: maximum 25 mg daily	Metoprolol tartrate or succinate Carvedilol Labetalol
Ciprofloxacin and Levofloxacin Eliminated renally, increasing risk for ADRs: QT prolongation, CNS effects, tendinopathy	Ciprofloxacin: CrCl > 50: none CrCl 30-50: 250-500 mg q12 hrs CrCl < 30: 500 mg q24 hrs	Alternative antibiotics as applicable
	Levofloxacin: CrCl > 50: none CrCl 20-49: maximum 750 mg q48 hrs CrCl < 20: maximum 500 mg q48 hrs	
Famotidine Eliminated renally, increasing risk for ADRs: agitation, confusion, delirium	CrCl <50: Administer 50% of usual dose or continue usual dose but increase the dosing interval to every 36 to 48 hours	Calcium carbonate
Fenofibrate Eliminated renally, increasing risk for ADRs: increase in Cr, AKI usually in association with rhabdomyolysis	CrCl >30 to 80: Use lowest available tablet strength (if a formulation is not available in a strength that is \leq 67 mg then an alternate formulation should be used); do not titrate. CrCl \leq 30: Use contraindicated.	Omega-3 fatty acids
Gabapentin Eliminated renally, increasing risk for ADRs: dizziness, drowsiness	CrCl 50-79: Max 1,800mg/day in 3 divided doses CrCl 30-49: ~50% reduction; max 900mg/day in 2-3 divided doses CrCl 15-29: ~75% reduction; max 600mg/day in 1-2 divided doses CrCl <15: ~90% reduction; max 300 mg/day in 1 dose 600mg/day in 1-2 divided doses CrCl <15: ~90% reduction; max 300 mg/day in 1 dose	Amitriptyline, Lidoderm Patch, Capsaicin
Metformin Eliminated renally, increasing risk for ADRs: lactic acidosis, GI upset	GFR > 45: none GFR 30-45: maximum 500 mg BID GFR < 30: use is contraindicated	GLP-1 RAs Insulin Linagliptin SGLT2i

The Importance of Early Detection of Kidney Disease

Early kidney disease is typically asymptomatic. In fact, approximately 37 million US adults are estimated to have CKD with most being undiagnosed, according to the CDC. Early identification, followed by risk stratification and treatment, has been known to potentially reduce the morbidity and mortality from CKD and its related complications such as cardiovascular disease, hyperlipidemia, anemia, and bone-mineral disease.

Who to Screen

Approximately 75% of cases of kidney failure are due to diabetes or high blood pressure. Early identification of CKD should be implemented through **targeted** screening for kidney disease based on known risk factors which include:

- High blood pressure
- Diabetes
- Cardiovascular disease
- Family history of kidney disease
- History of acute kidney injury
- Medical conditions that impact kidney function (e.g. SLE, HIV, obesity, genetic risk factors)
- High-risk occupations and environmental exposure to nephrotoxins

How to Screen

Serum creatinine and GFR estimating equation should be used for initial assessment. KDIGO recommends using the 2009 CKD-EPI creatinine equation, if possible, for calculating eGFR. If eGFR is <60mL/min/1.73m2 for >3 months, the diagnosis of CKD is confirmed. Evaluation for albuminuria using an early morning urine sample can be accomplished in many ways. The order of preference for testing is:

- Urine albumin-to-creatinine ratio
- Urine protein-to-creatinine ratio
- Reagent strip urinalysis for total protein with automated reading, or
- Reagent strip urinalysis for total protein with manual reading

ICD-10-CM Code	Description	Category	GFR
N18.1	Chronic Kidney Disease, Stage 1	G1	<u>></u> 90mL/min/1.73m2
N18.2	Chronic Kidney Disease, Stage 2	G2	60-89mL/min/1.73m2
N18.30	Chronic Kidney Disease, Stage 3 Unspecified	G3	30-59mL/min/1.73m2
N18.31	Chronic Kidney Disease, Stage 3a	G3a	45-59mL/min/1.73m2
N18.32	Chronic Kidney Disease, Stage 3b	G3b	30-44mL/min/1.73m2
N18.4	Chronic Kidney Disease, Stage 4	G4	15-29mL/min/1.73m2
N18.5	Chronic Kidney Disease, Stage 5	G5	<15mL/min/1.73m2

Coding the Stages of CKD

Guide to frequency of assessment for CKD progression

Once the diagnosis of CKD has been established, use of the **KDIGO Heat Map** (which incorporates both GFR category and persistent albuminuria) can be utilized to evaluate the risk of CKD progression, progression to kidney failure, and can help guide timely referral to Nephrology.

Tip Sheet

			Persistent Albuminuria categories Description and range			
K	KDIGO Heat Map			A1	A2	A 3
-			Kidney function	Normal to mildly increased	Moderately increased	Severely increased
	Stage	Kidney function	Test Result	<30 mg/g <3 mg/mmol	30-300 mg/g 3-30 mg/mmol	>300 mg/g >30 mg/mmol
1.73 m ²)	G1	Normal or high	<u>></u> 90	MONITOR 1	MONITOR 1	REFER* 2
	G2	Mildly decreased	60-89	MONITOR 1	MONITOR 1	REFER* 2
(ml/min per tion and range	G3a	Mildly to moderately decreased	45-59	MONITOR 1	MONITOR 2	REFER 3
	G3b	Moderately to severely decreased	30-44	MONITOR 2	MONITOR 3	REFER 3
GFR categories Descrip	G4	Severely decreased	15-29	REFER* 3	REFER* 3	REFER 4+
ΰ	G5	Kidney failure	<15	REFER 4+	REFER 4+	REFER 4+

Low Risk: Do not have CKD or at lowest risk for progression. Monitor 1 time per year. Moderately increased risk: Increased risk for CKD getting worse. Monitor 1 time per year. High risk: Hight risk for CKD getting worse. Monitor 2 times per year.

Very high risk: Highest risk for CKD getting worse. Monitor at least 3 to 4 or more times per year.

Numbers: Represent a recommendation for the number of times per year the patient should be monitored. **Refer:** Indicates that a Nephrology referral and services are recommended.

*Consultation with Nephrology service should take place as needed depending on local arrangements regarding frequency of monitoring and timing of referral.

It should be noted that even at the relatively normal-mildly decreased categories of GFR (that is, G1 or G2), persistent albuminuria can accelerate a patient's progression towards worsening CKD or kidney failure, highlighting the need to monitor albuminuria closely. This also underscores the importance of early identification and accurate coding of CKD, even at relatively early stages including G1-G3, to monitor these patients closely over time.

If your patient has CKD, we recommend these important steps:

- Follow KDIGO Guidelines as above
- Complete a wellness visit yearly
- Recommend lifestyle changes and provide CKD Education
- Treat underlying health conditions:
 - Keep blood pressure within target range
 - Keep blood sugar or diabetes under control
 - Take medications as prescribed by doctor

Note: Consult with doctor or pharmacist before taking any over-the-counter medications or supplements to avoid agents that may worsen kidney function, hypertension, or diabetes

Palliative Care in Advanced CKD & ESRD

Palliative care is supportive, team-based care and a crucial component of the management of advanced chronic kidney disease (CKD) and end-stage renal disease (ESRD), focusing on improving quality of life, alleviating symptoms, and supporting patients and their families. It is important to remember that palliative care is not necessarily the pathway to hospice and can be appropriate at any stage of a patient's disease journey.

How can palliative care help patients with Advanced CKD & ESRD?

Multidisciplinary Team Based-Care

Palliative care providers will collaborate with nephrologists, social workers, dietitians, spiritual care providers, and other specialists to ensure seamless communication amongst the care teams to provide coordinated, holistic care.

Symptom Management

Palliative care can be provided in conjunction with ongoing treatment(s) and can help manage distressing symptoms often experienced by patients with advanced CKD & ESRD including:

- **Pain:** Use medications safe for renal impairment (e.g., acetaminophen) and avoid NSAIDs. Opioids may be used cautiously.
- **Fatigue and Weakness:** Assess for anemia, metabolic disturbances, and malnutrition. Tailor interventions to the patient's functional goals.
- **Nausea/Vomiting:** Common in uremia; consider alterations in dialysis prescription and dietary adjustments.
- **Pruritus (Itching):** Optimize dialysis, manage phosphate levels, and consider treatments like gabapentin or antihistamines.
- **Breathlessness:** Address fluid overload or metabolic acidosis. Oxygen therapy may help if hypoxic.
- **Depression/Anxiety:** Screen regularly and offer counseling, antidepressants, or anxiolytics as needed.

Psychosocial Support

Advanced CKD and kidney failure can be overwhelming; however, palliative care provides emotional support for both patients and their families

Emotional Support	Family and Caregiver Support
 Address the psychological impact of advanced CKD/ESRD, including grief, fear, and loss of independence. 	• Offer guidance to family members, helping them understand the disease trajectory and how they can assist.
Provide counseling or connect patients with mental health professionals if needed.	Encourage caregiver self-care to prevent burnout.

Patient Centered Support for Decision-Making

Palliative care helps to facilitate conversations about a patient's values, preferences and goals of care when discussing treatment options and impact on quality of life.

Advance Care Planning:

- \circ $\,$ Address topics such as advance directives, code status, and preferred place of care or death.
- $_{\odot}$ $\,$ Ensure regular updates to the care plan as the patient's condition evolves.

• ESRD Decision-Making:

- Dialysis or Kidney Transplant Decisions:
 - Help patients weigh the burdens and benefits of dialysis or kidney transplant, especially in frail or elderly patients.
 - Discuss conservative (non-dialysis) management as a viable option for some, focusing on symptom relief and quality of life.
- Withdrawal from Dialysis:
 - For patients who decide to stop dialysis, provide symptom management and emotional support during the transition to end-of-life care.

Additional Resources

Support Teams & Services		
Care Management	Mobile Providers	Palliative Care
Services include:	Services include:	Services include:
Community resources	Home NP/PCP visits	Home visits
Disease & lifestyle education		Patient centered treatment goals &
Post discharge assistance	Link to Home Care Providers	condition management
End of life planning		Extra support
& much more		Coordination with PCP office
Link to CM Referral Form		Link to Palliative Care Provider List

Palliative Care Helps Patients with Kidney Disease | National Kidney Foundation

Chronic Kidney Disease Coding

Chronic Kidney Disease, Stage 3A/3B

The Disanosis	Chronic Kidney Disease, Stage 3A/3B
The Diagnosis COMMON CONDITIONS	Chronic Kidney Disease, Stage 3, unspecified – N18.30
INCLUDED IN HCC	
GROUPs: 329, 328	Chronic Kidney Disease, Stage 3a – N18.31
	Chronic Kidney Disease, Stage 3b – N18.32
RAF score = 0.127	
KEY CODING or DOCUMENTATION TIPS	The chronic kidney disease (CKD) Stage 3a and Stage 3b are two separate HCC groups, and their RAF score is the same.
	The CKD staging <u>MUST</u> be included in the patient encounter for diabetic kidney disease and all CKD diagnoses. If no staging is included in the documentation, then the coder should query the provider.
	Be sure to include linking words (with, due to, etc.) when documenting the relationship between CKD and another disease, like diabetes.
MEAT the DOCUMENTATION	Assessment and Plan example: Type 2 diabetes mellitus with diabetic chronic kidney disease (E11.22) CKD stage 3b (N18.32) Long term (current) use of oral hypoglycemic drugs (Z79.84)
M= Monitor E = Evaluate A = Assess/Address T = Treat	Mr. L presents for his annual physical. VS stable, although BP was borderline at 140/88. No previous dx of HTN. Reviewed labs. eGFR is stable at 42, uACR 29, and Hgb A1c steady at 7.4. Pt states he usually tries to keep his A1c below 7, yet he recently returned from a two-week vacation, and he splurged a bit. Answered pt's questions regarding the CKD due to his diabetes. Follow-up in 4 months to recheck labs. Blood pressure check with nurse in 2 weeks.
	 M – Signs and symptoms, such as swelling, frequent urination, fatigue. E – Test results or vital signs, such as eGFR and A1c. A – Order tests or patient discussion, such as diet and exercise. T – Medications, therapy, or other modalities, such specialist follow-up.
IMPACT on QUALITY – HEDIS MEASURES	 Kidney Health Evaluation (CMS 95) – eGFR and uACR testing at least annually for type 2 diabetic patients. Only exclusion is for patients with ESRD, CKD stage 5, or in hospice or palliative care during the measurement period.

Chronic Kidney Disease, Stage 4

The Diagnosis	Chronic Kidney Disease, Stage 4
COMMON CONDITIONS INCLUDED IN HCC 327 RAF score = 0.514	Chronic Kidney Disease, Stage 4 – N18.4
KEY CODING or DOCUMENTATION TIPS	The CKD staging <u>MUST</u> be included in the patient encounter for diabetic kidney disease and all CKD diagnoses. If no staging is included in the documentation, then the coder should query the provider. Be sure to include linking words (with, due to, etc.) when documenting the relationship between CKD and another disease, like diabetes.
MEAT the DOCUMENTATION M= Monitor E = Evaluate A = Assess/Address T = Treat	 Assessment and Plan example: Hypertensive kidney disease (I12.9) CKD stage 4 (N18.4) Ms. Q presents for her preoperative clearance visit for her hip replacement. VS stable, except for BP 156/92. Pt states her pain is at a 7 today. Pt states she is trying to use the minimal amount of pain medicine before her surgery. Reviewed labs drawn at her preop visit at the hospital. eGFR is stable at 27, uACR 65. Normal exam for pt. Reviewed medications, and no changes in medications. Reviewed pt's instructions for medications to take the day of surgery, answered all questions. Pt cleared for hip replacement surgery. M – Signs and symptoms, such as swelling, frequent urination, fatigue. E – Test results or vital signs, such as eGFR and A1c. A – Order tests or patient discussion, such as diet and exercise. T – Medications, therapy, or other modalities, such specialist follow-up.
IMPACT on QUALITY – HEDIS MEASURES	 Kidney Health Evaluation (CMS 95) – eGFR and uACR testing at least annually for type 2 diabetic patients. Only exclusion is for patients with ESRD, CKD stage 5, or in hospice or palliative care during the measurement period.

Chronic Kidney Disease, Stage 5 and ESRD

The Diagnosis	Chronic Kidney Disease, Stage 5 and ESRD
COMMON CONDITIONS INCLUDED IN HCC 326 RAF score = 0.815	Chronic Kidney Disease, Stage 5 – N18.5 End stage renal disease (ESRD) – N18.6
KEY CODING or DOCUMENTATION TIPS	The CKD staging <u>MUST</u> be included in the patient encounter for diabetic kidney disease and all CKD diagnoses. If no staging is included in the documentation, then the coder should query the provider. Be sure to include linking words (with, due to, etc.) when documenting the relationship between CKD and another disease, like diabetes.
MEAT the DOCUMENTATION M= Monitor	Assessment and Plan example: Polycystic kidney, adult type (Q61.2) CKD stage 5 (N18.5) Secondary Hypertension (I15.1) Reactive depression, single episode (F32.9) Ms. Y presents for her AWV. VS stable, except for BP 163/98. HTN is due
M= Monitor E = Evaluate A = Assess/Address T = Treat	 to polycystic kidney disease. Reviewed all screenings. PHQ9 was a 6. Pt concerned that she is going to have to start dialysis soon. eGFR is 12. Normal exam for pt. Reviewed medications, and no changes. Pt refused an antidepressant, but stated she would like to talk with a counselor. Will have care coordinator help set up an appt with the social worker for next week. M – Signs and symptoms, such as swelling, frequent urination, fatigue.
	 E - Test results or vital signs, such as eGFR and A1c. A - Order tests or patient discussion, such as diet and exercise. T - Medications, therapy, or other modalities, such specialist follow-up.
IMPACT on QUALITY – HEDIS MEASURES	Chronic kidney disease (CKD), stage 5 and End-stage renal disease (ESRD) diagnoses are considered advanced illness diagnoses. When added to a claim twice in the current or prior year meets the advanced illness criteria. Frailty or advanced illness, ESRD, and/or palliative care diagnosis codes may provide a denominator exclusion.

Hypertensive Heart and/or Kidney Disease

The Diagnosis	Hypertensive Heart and/or Kidney Disease
COMMON CONDITIONS	Hypertensive heart disease with heart failure – I11.0
INCLUDED IN HCC	Hypertensive heart disease without heart failure – I11.9
GROUPs:	Hypertensive kidney disease with stage 5 CKD or ESRD – I12.0
 226 (Heart Failure) 326, 327, 328, 329 (CKD) 	Hypertensive kidney disease with stage 1-4 CKD or unspecified kidney disease – I12.9
	Hypertensive heart and kidney disease with heart failure and CKD stage 1-4 or unspecified kidney disease - I13.0
RAF score = ** Varies** Ranging from 0 – 0.815	Hypertensive heart and kidney disease without heart failure and CKD stage 1-4 or unspecified kidney disease - I13.10
	Hypertensive heart and kidney disease with heart failure and CKD stage 5 or ESRD – I13.2
KEY CODING or DOCUMENTATION TIPS	There is a causal relationship between heart failure and hypertension. If your patient has heart failure and it is <u>NOT</u> linked to a declining cardiovascular status due to hypertension, then your note needs to explain that the two are not linked.
	Essential or benign hypertension (I10) is <u>NOT</u> the most appropriate diagnosis for a patient with heart failure and/or chronic kidney disease. The coder should update the diagnosis or query the provider.
MEAT the DOCUMENTATION	Assessment and Plan example: Hypertensive heart failure and CKD stage 1-4 (I13.0) Chronic combined systolic and diastolic heart failure (I50.42) CKD stage 3b (N18.32)
M= Monitor E = Evaluate A = Assess/Address	Ms. R presents with no changes in heart failure symptoms. 2+ pitting edema bilaterally. Lungs CTA. S1, S2, no gallop. BP 144/82. Reviewed labs and eGFR is stable at 38. Counselled patient regarding heart failure and kidney diets (low sodium). Pt states she usually does better, but the recent holidays made it challenging. Pt sees Dr. Cardio next month. No changes to current meds.
T = Treat	\mathbf{M} – Signs and symptoms, such as pitting edema.
	E – Test results or vital signs, such as eGFR.
	A – Order tests or patient discussion, such as diet.
	T – Medications, therapy, or other modalities, such specialist follow-up.
IMPACT on QUALITY – HEDIS MEASURES	The Controlling high blood pressure (CBP) quality metric includes patients with the diagnosis of <i>I10</i> in the denominator. If a patient has a hypertension diagnosis other than <i>I10</i> , then they are NOT included in the denominator.
	Use of I11 – I13 means the patient is not included in this quality metric.

Quality Measure: Kidney Health Evaluation

KED Quick Reference

Measure	Description & Best Practices	Documentation	NSSD
Kidney Health Evaluation for Patients With Diabetes (KED) Weight – 1	 Percentage of patients ages 18-85 with diabetes (Types 1 and 2) who had a kidney health evaluation in the measurement year. Order eGFR and uACR per recommendation of National Kidney Foundation (required) Complete urine albumin and urine creatinine tests for uACR within 4 days of each other(required) Education of patient that kidney disease is asymptomatic in early stages and routine testing is recommended 	 eGFR and uACR lab results are required via claims Additional Exclusions: Dialysis or ESRD Ages 81 and older with frailty only 	Not Accepted

	Exclusions	
 Hospice Members who had an encounter for palliative care (ICD-10 code Z51.5) 	 Ages 66 and older with frailty and advanced illness Ages 66 and older with I-SNP or who are institutionalized 	 Members who died during the measurement year No diagnosis of diabetes in any setting and steroid-induced diabetes

Kidney Health Evaluation for Patients with Diabetes (KED)

Measure Description

Percentage of patients ages 18-85 with diabetes (Types 1 and 2) who had a kidney health evaluation in the measurement year.

Measure Compliance

Both an eGFR and a uACR test are required on the same or different dates of service anytime between January 1 and December 31 of a given calendar year:

- At least 1 estimated glomerular filtration rate (eGFR); and
 - At least 1 urine albumin-creatinine ratio (uACR) test identified by one of the following:
 - A quantitative urine albumin test and a urine creatinine test 4 or less days apart; or
 - A uACR

Star Cut Points

HEDIS	2 Stars	3 Stars	4 Stars	5 Stars
KED	33%	49%	61%	73%

Tips and Best Practices

- Documentation
 - eGFR and uACR lab results are required; documented results from EMR Progress Note are not accepted for Non-Standard Supplemental Data submission
 - Medical record documentation is accepted to exclude patients from the denominator in the following cases:
 - Patients with end-stage renal disease any time during patient's history on or prior to December 31
 - Patients who have been diagnosed with polycystic ovarian syndrome, gestational diabetes, or steroid-induced diabetes

• Innovaccer

- Utilize InNote at point-of-care
- Utilize Network PCP Dashboard/Quality tab to create list of patients with open care gap for Kidney Health Evaluation for Patients with Diabetes
- Clinical*
 - Create in-house lab workflow and documentation in EMR
 - Pre-visit huddles/planning process with clinical staff (Provider/Scribe/MA)
 - Analyze appropriateness of routine labs for diabetic patients
 - Education of patient that kidney disease is asymptomatic in early stages and routine testing is recommended
 - Education of patient about disease process for improved management of health condition
 - Care coordination with a network nephrologist for patients with CKD 4 and CKD 5

• Office Team & Resources

- \circ $\,$ Team member reviews chart following visit to ensure lab was ordered and given to patient
- Office team member to mail lab order to patient, if needed
- Workflow in place for staff to generate a list of lab orders placed and monitors for completion; if report not received in 30 days, follow up with patient
- Creation of alerts in EMR for laboratory test due dates

*Patients with diabetes can request these laboratory tests without an order from their provider.

Quality Measure

Exclusions*

•

- Palliative Care any time during the measurement year
- Hospice care or utilization of hospice services any time during measurement year
 - Frailty and Advanced Illness (diagnosis must be in current measurement year)
 - Beginning Jan. 1, 2023, Frailty exclusion requires two different dates of service during the measurement year
- Living in Long-term Care Facility any time during the measurement year
- Patients with end-stage renal disease diagnosis or dialysis any time during patient's history on or prior to December 31
- Patients who have not been diagnosed with diabetes
- Patients who have been diagnosed with polycystic ovarian syndrome, gestational diabetes or steroid-induced diabetes
 *All exclusion considerations must be submitted through claims, by place of service, services

*All exclusion considerations must be submitted through claims, by place of service, services provided or exclusionary diagnosis

Codes Used to Close Measure

Estimated Glomerular Filtration Rate Lab Test:

Code Type	Code	Description
CPT®	80047	Estimated Glomerular Filtration Rate Lab Test
CPT®	80048	Estimated Glomerular Filtration Rate Lab Test
CPT®	80050	Estimated Glomerular Filtration Rate Lab Test
CPT®	80053	Estimated Glomerular Filtration Rate Lab Test
CPT®	80069	Estimated Glomerular Filtration Rate Lab Test
CPT®	82565	Estimated Glomerular Filtration Rate Lab Test
LOINC	48642-3	Estimated Glomerular Filtration Rate Lab Test
LOINC	48643-1	Estimated Glomerular Filtration Rate Lab Test
LOINC	50044-7	Estimated Glomerular Filtration Rate Lab Test
LOINC	50210-4	Estimated Glomerular Filtration Rate Lab Test
LOINC	50384-7	Estimated Glomerular Filtration Rate Lab Test
LOINC	62238-1	Estimated Glomerular Filtration Rate Lab Test
LOINC	69405-9	Estimated Glomerular Filtration Rate Lab Test
LOINC	70969-1	Estimated Glomerular Filtration Rate Lab Test
LOINC	77147-7	Estimated Glomerular Filtration Rate Lab Test
LOINC	88293-6	Estimated Glomerular Filtration Rate Lab Test
LOINC	88294-4	Estimated Glomerular Filtration Rate Lab Test
LOINC	94677-2	Estimated Glomerular Filtration Rate Lab Test
LOINC	96591-3	Estimated Glomerular Filtration Rate Lab Test
LOINC	96592-1	Estimated Glomerular Filtration Rate Lab Test
LOINC	98979-8	Estimated Glomerular Filtration Rate Lab Test
LOINC	98980-6	Estimated Glomerular Filtration Rate Lab Test
SNOMED	12341000	Estimated Glomerular Filtration Rate Lab Test
SNOMED	18207002	Estimated Glomerular Filtration Rate Lab Test
SNOMED	241373003	Estimated Glomerular Filtration Rate Lab Test
SNOMED	444275009	Estimated Glomerular Filtration Rate Lab Test
SNOMED	444336003	Estimated Glomerular Filtration Rate Lab Test
SNOMED	446913004	Estimated Glomerular Filtration Rate Lab Test
SNOMED	706951006	Estimated Glomerular Filtration Rate Lab Test
SNOMED	763355007	Estimated Glomerular Filtration Rate Lab Test

Quality Measure

Quantitative Urine Albumin Lab Test:

Code Type	Code	Description
CPT®	82043	Quantitative Urine Albumin Lab Test
LOINC	14957-5	Quantitative Urine Albumin Lab Test
LOINC	1754-1	Quantitative Urine Albumin Lab Test
LOINC	21059-1	Quantitative Urine Albumin Lab Test
LOINC	30003-8	Quantitative Urine Albumin Lab Test
LOINC	43605-5	Quantitative Urine Albumin Lab Test
LOINC	53530-2	Quantitative Urine Albumin Lab Test
LOINC	53531-0	Quantitative Urine Albumin Lab Test
LOINC	57369-1	Quantitative Urine Albumin Lab Test
LOINC	89999-7	Quantitative Urine Albumin Lab Test
SNOMED	104486009	Quantitative Urine Albumin Lab Test
SNOMED	104819000	Quantitative Urine Albumin Lab Test

Urine Creatinine Lab Test:

Code Type	Code	Description
CPT®	82570	Urine Creatinine Lab Test
LOINC	20624-3	Urine Creatinine Lab Test
LOINC	2161-8	Urine Creatinine Lab Test
LOINC	35674-1	Urine Creatinine Lab Test
LOINC	39982-4	Urine Creatinine Lab Test
LOINC	57344-4	Urine Creatinine Lab Test
LOINC	57346-9	Urine Creatinine Lab Test
LOINC	58951-5	Urine Creatinine Lab Test
SNOMED	8879006	Urine Creatinine Lab Test
SNOMED	36793009	Urine Creatinine Lab Test
SNOMED	271260009	Urine Creatinine Lab Test
SNOMED	444322008	Urine Creatinine Lab Test

CPT[®] is a registered trademark of the American Medical Association

Renal Education & Care Management Support

Kidney Smart[®]

Online, no cost kidney education available to all.

Kidney Smart® Patient Flyer

Attend a Kidney Smart® Class From the Comfort of Home

If you can't make it to an in-person class, attend from the comfort of home and take control of your kidney health.

Instructor-led online classes are taught by kidney care experts. You can easily ask questions similar to if you were in an in-person class setting.

More than 175,000 people have taken the next step in kidney education by attending a Kidney Smart class.

Are you ready to take the next step? Register today at **KidneySmart.org** or

call 623-203-4751

Classes are available to anyone at no cost. You will learn:

- What causes kidney disease
- What kidney diet resources are available
- What can be done to manage a healthy lifestyle
- How medication management can help lead to better kidney health
- Why employment and insurance coverage are important
- What treatment options are available
- How the transplant process works

Banner Plans & Networks **Renal Education** Kidney Smart[®] Provider Recommendation Sheet Recommendation to Kidney Smart Patient needs: CKD Basics (overview of Managing CKD and all modalities) Home Specific Education - PD Managing CKD - Diet & Lifestyle Only Home Specific Education - HHD Modality Education (overview of all modalities) To recommend your patient to Kidney Smart, follow these 4 simple steps: 1. Complete this form or print the patient's demographics from your EMR Fax this form along with necessary documents to the number listed below 3. Let your patient know they will receive a call to get scheduled for their class 4. You will receive updates via email on the patient's class completion status via the Physician Status Update Tool (PSUT) Remind patients that a Kidney Smart Class can include: General kidney education Resources for working patients Kidney diet considerations Treatment options • Insurance education How the transplant process works Patient information First Name: Last Name: Patient Phone: **Alternate Phone:** Date of Birth: **Recommending Physician Name:** English Language Preference: Spanish Other: Patient GFR: Notes

Please fax this form with patient demographics to: 888-810-2902 Text or call 623-203-4751 for more info.



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Care Management Referral Form Connect high risk members to Complex Care Management.

-	al Forms can be sent to: pHealthManagement@BannerHealth.com
Please send Maternal Health Behavioral: <u>BUHPCareMgmtBHMailbox@bannerhealth.com</u> M	or Behavioral Health referrals to:
	Ith concerns shall be initiated through proper emergency or crisis services
	e Management will outreach to the member within 24 business hours.
Referral Date:	
Member Information	Referral Information
Primary Health Plan: Please Select	Requested By:
Additional Insurances (If Any):	Requester Name:
lame	Phone:
Address:	Diagnosis:
Phone: Language:	PCP:
IEDICAL	Management Request
 Medication Assistance (ex: education, cost barriers, adhered Chronic condition / Newly diagnosed condition(s) (specijic Non-adherence to PCP treatment plan, missed appoint High Priority Transplant, HIV, Hemophilia member requ Interdepartmental Medical Management request for in 	<i>fy below)</i> ments and/or annual screening lesting assistance
 Dial Into Diabetes Program – Diabetic Care Managemer Home Safety Concerns Advance Directive / End of Life Planning Community Resources (ex: financial needs, transportation, ALTCS ONLY – Refer to assigned CM / RN Other (specify below) 	year after delivery), Pediatric <i>(under age 21)</i> , and CRS nt
 Dial Into Diabetes Program – Diabetic Care Managemer Home Safety Concerns Advance Directive / End of Life Planning Community Resources (ex: financial needs, transportation, ALTCS ONLY – Refer to assigned CM / RN Other (specify below) CHAVIORAL Routine BH referrals (ex: member requests advocacy for Beway that is not urgent or related to inpatient and/or medicat Member / Family member has questions about BH serv Suicidal / Homicidal caller. (Please refer AFTER you follow Member requests referral for BH services (ex: therapy, g 	year after delivery), Pediatric (under age 21), and CRS ht caregiver support, support groups) chavioral Health or indicates need for BH assistance in some tion) rices, how to access covered services, complaints, etc. SI/HI protocol) roups, etc.)
 Dial Into Diabetes Program – Diabetic Care Managemer Home Safety Concerns Advance Directive / End of Life Planning Community Resources (ex: financial needs, transportation, ALTCS ONLY – Refer to assigned CM / RN Other (specify below) BEHAVIORAL Routine BH referrals (ex: member requests advocacy for Beway that is not urgent or related to inpatient and/or medicate Member / Family member has questions about BH services Suicidal / Homicidal caller. (Please refer <u>AFTER</u> you follow) Member requests referral for BH services (ex: therapy, g Mental Health needs (ex: Dementia, Alzheimer's, depression Urgent need for psychotropic medication ALTCS ONLY – Refer to assigned CM/RN 	year after delivery), Pediatric (under age 21), and CRS ht caregiver support, support groups) chavioral Health or indicates need for BH assistance in some tion) rices, how to access covered services, complaints, etc. SI/HI protocol) roups, etc.)
 Dial Into Diabetes Program – Diabetic Care Management Home Safety Concerns Advance Directive / End of Life Planning Community Resources (ex: financial needs, transportation, ALTCS ONLY – Refer to assigned CM / RN Other (specify below) BEHAVIORAL Routine BH referrals (ex: member requests advocacy for Beway that is not urgent or related to inpatient and/or medicated Member / Family member has questions about BH servers Suicidal / Homicidal caller. (Please refer <u>AFTER</u> you follow Member requests referral for BH services (ex: therapy, g Mental Health needs (ex: Dementia, Alzheimer's, depression Urgent need for psychotropic medication ALTCS ONLY – Refer to assigned CM/RN Other (specify below)	year after delivery), Pediatric (under age 21), and CRS ht caregiver support, support groups) chavioral Health or indicates need for BH assistance in some tion) rices, how to access covered services, complaints, etc. SI/HI protocol) roups, etc.)

Patient Support

Kidney Disease Virtual Support Group

Virtual support group for anyone affected by kidney disease.



Banner University Medicine Transplant Institute



<u>KIDNEY DISEASE</u> VIRTUAL SUPPORT GROUP

In Partnership with the Transplant Community Alliance

Free & All Are Welcome: Patients, Family, Caregivers, Recipients, Living Donors

When: 1st Thursday of the Month Where: Join Us Online or by Phone Time: 7:00PM – 8:00PM

Email for Invite Link: Loren.Gallegly@bannerhealth.com



Contact: Loren Gallegly, LMSW 602-521-5844 or loren.gallegly@bannerhealth.com

Palliative Care Providers

Palliative Care										
Provider Name	Webpage	Service Areas	Banner MA HMO/PPO	Banner MA DUAL	Aetna MA	BCBS MA	UHC MA		BUHP ALTCS	Banner Aetna
Doctor Care 480-575-057 7010 E Acoma Drive Ste 102	https://doctorcareaz.com/about.php	Phoenix Metro	x	x				x	x	
Scottsdale, AZ 85254 Casa De La Luz Palliative Care 520-544-9890 7740 N Oracle Road	www.lhcgroup.com	Tucson	x	x				x	x	
Tucson, AZ 85704 Sage Primary & Palliative Care 480-771-3400 3030 N Central Ave Ste 1200	www.sagefoc.com	Maricopa, Pinal & Pima	x	x				x	x	x
Phoenix, AZ 85012 Frances E Davison dba Southwestern Palliative Care 928-366-1067 1950 W 3rd St	www.swpchospice.com	Yuma	x	x				x	x	x
Yuma, AZ 85364 Compassus - Phoenix 623-900-2645 5333 N 7th St. STE C-123	<u>Compassus Home Health, Infusion,</u> Hospice, & Palliative Care	Maricopa & Pinal	x	x			x	x	x	
Phoenix, AZ 85014 Eternity Hospice & Palliative 602-374-68781 4122 W McDowell Rd # 204 Goodyear, AZ 85395	www.eternityhospicepalliativecare.com	Phoenix Metro	x	x				x	x	
Agave Hospice & Palliative Care 602-855-3500 3240 E. Union Hills Drive Ste 145 Phoenix, AZ 85050	<u>Agave – Hospice & Palliative Care</u> <u>(agavehealthcare.com)</u>	Phoenix Metro	x	x			x	x	x	
Palliative Care Alliance 602-269-6011 426 N 44th Street, Suite 450 Phoenix, AZ 85008	https://palliativeca.com/	Maricopa & Pinal							x	
Divine Hospice and Palliative Care 623-566-7995 18185 N 83rd Avenue Suite 203 Glendale AZ, 85308	https://www.divinehospiceaz.com/_	Glendale		x				x	x	

It has been the objective of Banner to identify local resources available for patients and their families. Any errors or omissions in the above list is unintentional. Furthermore, exclusion from this list does not imply lack of approval, nor does inclusion indicate coverage endorsement of any resource or its program.

Home Care Providers

Home Providers										
Provider Information	Webpage	Service Areas	Banner MA HMO	Banner MA DUAL	Aetna MA	BCBS MA		BUHP ACC	BUHP ALTCS	Banner Aetna
Geriatric Solutions 602-954-0444 1510 E Flower St. Phoenix, AZ 85014	www.geriatricsolutions.org	Maricopa County	x	x			x	x	x	
My Doctor Now 480-677-4663 Multiple Locations	www.mydrnow.com	Phoenix Metro		x			x			
ASAP Health Solutions 602-996-5595 29455 N Cave Creek Rd #118 Cave Creek, AZ 85331	www.asaphealthsolutions.com	Phoenix Metro		x						
Southwest Geriatric 520-314-3412 6890 E Sunrise Dr Tucson, AZ 85750	www.swgeriatrics.com	Tucson	x	x				x	x	
Dispatch Health Urgent Care at Home 480-351-3918 Multiple locations	www.dispatchhealth.com	Phoenix Metro	x	x			x	x	x	

It has been the objective of Banner to identify local resources available for patients and their families. Any errors or omissions in the above list is unintentional. Furthermore, exclusion from this list does not imply lack of approval, nor does inclusion indicate coverage endorsement of any resource or its program.

References

These guidelines serve to assist in the management, documentation, and coding of clinical diagnoses. The intent of this document is to supplement, but not replace, the provider's clinical judgement.

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Updated 2/24/2025

References

Renal Care Provider One Pager

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- Identify & Evaluate Patients with Chronic Kidney Disease NIDDK (nih.gov)
- CKD Early Identification & Intervention Toolkit (<u>https://www.theisn.org/initiatives/toolkits/ckd-early-screening-intervention/</u>)
- Heat map adapted from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. Kidney Int Suppl. 2013;3:1-150 and National Kidney Foundation (<u>https://www.kidney.org/</u>).

Renal Care Guidelines and Renal Medication Alternative Guidelines

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- Munar, M., Singh, H. 2007. *Drug Dosing Adjustments in Patients with Chronic Kidney Disease*. Am Fam Physician. 2007 May 15;75(10):1487-1496.
- Renal medication recommendations updated per KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease, Stevens, Paul E. et al., Kidney International, Volume 105, Issue 4, S117 S314

The Importance of Early Detection of Kidney Disease Tip Sheet

- Heat map adapted from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. Kidney Int Suppl. 2013;3:1-150 and National Kidney Foundation (<u>https://www.kidney.org/</u>).
- Lifestyle recommendations adapted from NIDDK: <u>Managing Chronic Kidney Disease NIDDK</u> (<u>nih.gov</u>), National Kidney Foundation (<u>https://www.kidney.org/</u>).

Palliative Care in Advanced CKD and ESRD Tip Sheet

- https://www.medpagetoday.com/opinion/second-opinions/108848
- National Kidney Foundation: Palliative Care Helps Patients with Kidney Disease (<u>https://www.kidney.org/kidney-topics/palliative-care-helps-patients-kidney-disease</u>)

Acronyms:

ACE-I:	Angiotensin-Converting Enzyme Inhibitor
ACR:	Albumin-to-Creatinine Ratio
AER:	Albumin Excretion Rate
AKI:	Acute Kidney Injury
ARB:	Angiotensin II Receptor Blocker
BHN:	Banner Health Network
CKD:	Chronic kidney disease
eGFR/GFR:	Estimated Glomerular Filtration Rate/Glomerular Filtration Rate
ESA:	Erythropoietin Stimulating Agent
ESRD:	End Stage Renal Disease
KDIGO:	Kidney Disease: Improving Global Outcomes
KED:	Kidney Health Evaluation for Patients with Kidney Disease
NSAIDs:	Non-Steroidal Anti-Inflammatory Drugs
PPIs:	Proton Pump Inhibitors
PTH:	Parathyroid Hormone
RAS:	Renin-Angiotensin-System
RBC:	Red Blood Cells
SGLT2:	Sodium-Glucose Cotransporter-2 Inhibitors
SLE:	Systemic Lupus Erythematosus